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Contesting renewable energy in the global south: A case-study of local opposition to a wind power project in the Western Ghats of India

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ABSTRACT

Influenced by global concerns around climate change mitigation, reduction in carbon emissions and energy security, countries are increasingly focussing on increasing the share of renewable energy. Various national and provincial level authorities are aggressively promoting renewable energy expansion, resulting in new geographies of renewable energy. The expansion of renewable energy, particularly large-scale projects, is contingent upon access to natural resources. However, areas that have high natural resource endowment for renewable energy, often have other overlapping uses of natural resources, including livelihoods and biodiversity. And renewable energy projects located in these areas compete with these other multiple uses of natural resources, often leading to unintended consequences. This study employs ethnographic methods to analyse the case of local opposition to a 113 MW wind power project, located in the Western Ghats of India. India, an emerging economy, is the fourth largest producer of wind energy worldwide and is expanding the share of renewable energy through national as well as provincial level policies. The Western Ghats are a designated UNESCO world heritage site for their exceptional biodiversity and the wind power project conflicted with natural resource-based livelihoods of indigenous populations and threatened their subsistence agricultural practices along with posing a threat to the ecology of the landscape. As a result, local activists protested against the wind power project and this contestation was animated and influenced by a variety of public, civic and private actors and institutions across scale. This paper uses insights from political ecology and energy geography to shed light on the interaction between these multiple actors and how this interaction mediated the contestations around renewable energy. It focuses on the micropolitics of this contestation to highlight the social and political processes that underpin the transition to sustainable energy. It sheds light on local struggles and contestations around renewable energy projects in conjunction with national and global commitments and shows how contestations around renewable energy in the Global South are distinct from the largely prevalent NIMBY approaches in the developed countries. This study contributes to global debates around governing renewable energy, particularly in developing countries.

1. Introduction

Global concerns around climate change mitigation, reduction in carbon emissions, energy security and depletion of fossil fuels are influencing the expansion of sustainable energy worldwide. The transition to sustainable energy is a key component of international collective action on climate change such as Paris Climate Agreement and the UN Sustainable Development Goals. Underscoring the importance of sustainable energy in achieving overall well-being and broad development goals, the United Nations has declared 2014–2024 as the 'International decade of sustainable energy'. As a result of this global emphasis on sustainable energy, almost all countries have declared national and provincial policy instruments to promote the expansion of renewable energy and to increase the share of renewable energy in their overall energy mix (UNEP, 2015).

The expansion of renewable energy, particularly large-scale projects, relies on access to natural resources. However, areas that have high natural resource endowment for renewable energy, often have other overlapping uses of natural resources, including livelihoods and biodiversity. Renewable energy projects located in areas that are critical for local natural-resource based livelihoods

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as well as for biodiversity outcomes, compete with these multiple uses of natural resources (Lakhanpal and Chhatre, 2018), leading to contestations and conflicts around natural resource use. This paper focuses on the micro-politics of contestations around renewable energy projects when they conflict with local livelihoods and biodiversity, to shed light on the social and political processes that underpin the transition to sustainable energy. To further this argument, this paper uses empirical evidence from a case of local opposition to a 113 MW wind power project, located on the outskirts of *Bhimashankar Wildlife Sanctuary* (BWS) in the Western Ghats of India. India, an emerging economy, is the world's fourth largest producer of wind energy and has one of the most ambitious renewable energy expansion targets as part of the Paris Climate Agreement. It plans to triple its existing renewable energy installation base from 59 GW to 175 GW by 2020 and wind energy is expected to contribute 60 GW to this energy transition. While renewables currently contribute to approximately 13% to India's energy mix, they are expected to contribute up to 25% by 2020.

The Western Ghats are a prime conservation area and include a cluster of 39 non-contiguous reserves as a designated UNESCO World Heritage Site for their outstanding diversity of flora and fauna. A global hotspot for biodiversity, the Western Ghats run parallel along India's western coast and support exceptional levels of endemism along with a variety of cultures and livelihoods. The Enercon India wind power project is located in the southern buffer zone of the BWS, a heavily forested region that supports a mosaic of flora, fauna and forest-dependent livelihoods. The wind power project conflicts with natural resource-based livelihoods of indigenous population and threatens their subsistence agricultural practices along with posing a threat to the ecology of the landscape. As a result, local activists protested against the wind power project and this contestation was animated and influenced by a variety of public, civic and private actors and institutions across scale. This study uses a political ecology approach to shed light on the interaction between these multiple actors and how it mediated the contestations around renewable energy. In doing so, it provides a nuanced account of cross-scalar social and political processes that influence and underpin renewable energy geographies.

Energy geography is an emerging field of inquiry and uses key geographical concepts and approaches, including political ecology to focus on social and political processes that undergird the transition to sustainable energy. It is concerned with the ways in which energy production, distribution and consumption is mediated by spatial politics and human-environment relationships. Scholars define the field of energy geography as “the study of energy development, transportation, markets or use patterns and their determinants from a spatial, political or resource management perspective” (Solomon and Pasqualetto, 2004, p. 832) and have firmly situated energy studies within geography's human-environment and nature-society tradition (Smil, 2008; Zimmerer, 2011; Bridge et al., 2013). While a significant body of work has emerged in the last few years on energy geographies, there remains a paucity of studies that situate renewable energy within issues of natural resource governance and examine contestations around renewable energy development, particularly in the Global South.

The literature on energy geographies has investigated the processes through which energy resources are materially and socially produced in uneven ways and with significant political, environmental and economic consequences (Bridge et al., 2013; Van Der Horst, 2014). Other studies have conceptualised energy infrastructures as sites of contestations and as spatial expressions of dominant political and economic ideologies (McCarthy, 2015). However, the key focus in most studies remains on the global and national levels as principal circuits of energy production and development (Zimmerer, 2011) and studies concerning how renewable energy impacts local indigenous communities and is, in turn, shaped by politics that spans multiple scales from the local to the national, have not been given adequate attention. By focusing on the cross-scalar politics of renewable energy geographies and the ways in which it is contested, this paper aims to bridge this gap in existing literature and furthers the argument that energy geographies are not pre-ordained but a product of social and political processes. This study focuses on the production of an energy geography in the Western Ghats of India and in the process aims to shed light on how these localized energy geographies participate in the wider context of India's transition to sustainable energy.

The main focus of scholarship on sustainable energy transitions and expansion has remained on its technical and managerial aspects. Scholars have argued that, “these changing patterns of energy production along with the emphasis on sustainable energy are co-constitutive and reflective of broader social and geographical change and should be examined along social and political dimensions” (Juisto, 2009, p. 534). While a growing stream of research has emerged to explore the social and political dimensions of energy transitions, there is a need to examine them in greater detail, with greater attention to political processes that underpin energy transitions (Stirling, 2014). Kuzemko et al. (2017) have argued that, “there is little sense of the context within which governing for sustainable transition takes place, of power relations between the relevant actor groups, and whether and how some actors are more influential than others over governance and decision making processes regarding sustainable energy”. An explicit emphasis on micro-politics of environmental and ecological contestations shifts attention to “local particularities and the importance of interactions among individuals in influencing environmental outcomes” (Horowitz, 2008, p. 259). By focusing on the micro-politics around renewable energy contestations, this paper provides a nuanced understanding of the context within which renewable energy development takes place and addresses the gap in current literature.

The paper is divided into five sections that first outline the political ecology approach to sustainable development and why it is relevant to this case study. A political ecology approach, is especially useful as it considers the role of various actors in shaping contestations around natural resource access. Progressive sections focus on the background of the case and the contestations around the renewable energy project. This is followed by a thematic explanation of how different actors interact to produce electoral politics and conservation politics that mediates the contestations around the wind power project. The article ends with a discussion on the ways through which renewable energy projects can be governed when they conflict with other overlapping uses of natural resources, particularly in the developing countries context.

1.1. Political ecology of sustainable development

The general consensus on sustainable development can be framed as, “A way of thinking about how to simultaneously meet the needs of people and the environment by enhancing human well-being and economic development without undermining ecological integrity.” (Mansfield, 2009, p. 39). However, sustainable development, both as a concept and in practice, is often framed in technical, economic and apolitical terms that are malleable and can be shaped to fulfil the interests of powerful actors. In the process, the needs and concerns of other stakeholders, often marginalized populations, are neglected (Sneddon, 2000; Mansfield, 2009). Additionally, a focus on the technical and scientific dimensions of sustainability does not consider the political and social drivers of environmental problems, thereby limiting the ability to generate action that can avoid adverse effects on the environment (Lele, 1991; Mansfield, 2009) and local communities.

The emphasis on promoting solutions that are technologically advanced, resource efficient yet avoid social and environmental costs results in an ever-expanding definition of ‘sustainable development’ (Adams, 2009). The flexibility inherent in the concept of Sustainable Development makes it appealing for a broad range of constituencies. Yet, even as the proponents of sustainable development claim that it balances concerns regarding protection of the environment with the need for economic development, this utopian vision seldom translates into reality. Sustainable Development has been critiqued for its ambiguity with respect to broader political economic systems. Even though it appears to address the environmental problems related to economic growth and expansion, it can be co-opted by vested interests to lead to greater penetration of capitalist growth but in ways that appear environmentally friendly, otherwise known as ‘greenwashing’ [Kenney-lazar et al., 2018; Adams, 2009; Escobar (2012)].

However, scholars have argued that despite these criticisms, sustainability can also prove to be a powerful concept for investigating contemporary human-environment relationships and construing positive change, particularly because conceptually it has the ability to bridge both the social as well as the ecological (Kenney-Lazar et al., 2018). In addition, it can provide a powerful critique of business-as-usual scenarios, through a focus on the underlying politics and the actors that animate sustainable development. Scholars have argued that sustainable development offers radical potential, at least strategically, as it can bring oppositional actors to the same bargaining table where its meanings can be contested by environmental activists, indigenous groups, civil society members, local residents and other kinds of non-industry actors (Torgerson, 1999). Sustainability can be a useful term when applied to particular geographic, temporal and socioecological contexts that require specific questions to be asked, such as what is being sustained, at what scale, and by and for whom (Sneddon, 2000). Approaches and disciplines such as political ecology are especially useful as they can constructively critique sustainable development and highlight the societal and political character of this concept.

Using insights from political ecology can add conceptual depth to sustainable development by considering the underlying politics and issues of resource control access. Political Ecology is defined as an analysis of the “complex relationships between Nature and Society through careful analysis of social forms of access and control over resources – with all their implications for environmental health and sustainable livelihoods” (Watts et al., 2010, p. 14). Political ecologists insist that we take into account the broader outcomes and impacts of decision-making processes, including their impact on (re)-alignment of power relations (Lawhorn and Murphy, 2011). For instance, political ecology approaches have shown how agroforestry technologies as sustainable development had significant unforeseen consequences for gender relations with the farming systems of Gambia (Schroeder, 1999).

India’s emergence as a significant player in the global wind industry was aided by various legislations, policy instruments and subsidies for producers that developed a market for renewable power and I provide a detailed overview of this transition in subsequent sections. The dominant narrative that underpins India’s aggressive expansion of renewable energy focuses on the technical, financial and managerial aspects and the social and political dimensions of this transition remain relatively under-studied. Recent scholarship has begun to explore the social and political dimensions of this sustainable energy transition, yet a significant gap exists. Scholars have shown how different actors across scales understand sustainable development differently in the Indian context. For instance, within the renewable energy sector, local populations are likely to understand renewable energy projects as an economic development project, whereas actors at higher scales view it as sustainable development (Lakhanpal and Chhatre, 2018), often leading to multiple environmentalities (Fletcher, 2010). As scholars have shown, other forms of sustainable development such as biodiversity conservation and restrictive enclosures have had a detrimental impact on local communities.

This article applies the political ecology approach to generate key questions about how sustainable energy is shaped through social and political processes. Does the expansion of renewable energy conflict with local livelihoods and other development needs of the local communities? How do multiple actors, located across scale interact to produce renewable energy geographies and influence sustainable energy outcomes? What are the political and social dynamics that allow renewable energy producers leeway in highly valued biodiverse environments?

2. Methods

This research was conducted using ethnographic fieldwork spread across six months including three villages and the city of Pune in 2015. The author also conducted semi-structured interviews with 45 respondents and participant observation at the field site. Semi-structured interviews were used with key actors to gauge the economic, political and cultural factors driving conflict in the case. Semi-structured interviews are useful methods for obtaining information about social conflicts as they can provide insights into the complex motivations of different actors that drive such conflicts (Dunn, 2000).

The interviewees included elected representatives including members of local elected village councils, forest guards, employees and officials working on the wind energy project, local activists, journalists in regional as well as national media, bureaucrats, officials working with the wind power project company, Enercon, and policy makers. The author also interviewed officials at MEDA

(Maharashtra Energy Development Authority), the nodal implementing agency for renewable energy in the state of Maharashtra and conservationists as well as ecologists. The author also analyzed policy documents, annual reports of the federal Ministry of New and Renewable energy (MNRE) pertaining to renewable energy in the state of Maharashtra as well as at the national scale in India.

3. Background

3.1. Study site and its significance

The Bhima Shankar Wildlife Sanctuary (BWS) is located in the Pune district of the prime conservation area of Western Ghats of the state of Maharashtra in India. The Western Ghats, including 39 non-contiguous reserves, have been recognized as a UNESCO World heritage site for its outstanding biodiversity. It is one of the world's eight 'hottest hotspots' of biological diversity and features a rich array of flora and fauna. It has an exceptionally high level of endemism and the forests of Western Ghats are home to at least 325 globally threatened flora, fauna, bird, amphibian, reptile and fish species (IUCN red data list). In addition to wildlife and outstanding biodiversity, the Western Ghats also support a mosaic of cultures and livelihoods. The Bhimashankar Wildlife Sanctuary is not part of the 39 non-contiguous reserves that have been recognized as a UNESCO World Heritage Site, yet exhibits high levels of biodiversity.

Situated on the crest of the Western Ghats, the BWS is spread across 130.78 square kilometres and exhibits a mosaic of different vegetation patterns, harbours 529 species of animals, including the state animal of Maharashtra, the Indian Giant Squirrel (*Ratufa indica*). Large tracts of contiguous forests in and around the BWS form an upper catchment of the River Krishna. These forests are the northern most stretch of semi-evergreen and seasonal cloud forests and home to endangered fauna and flora such as leopard (*Panthera pardus*), some rare medicinal plants and the bio-luminous fungus (*Armillaria mellea*), among others.

The wildlife sanctuary also houses 14 sacred groves, that are patches of dense forests traditionally protected by local communities because of their spiritual value. A total of 18 villages and hamlets are located inside the sanctuary and most of them are Adivasi communities that depend upon the land and forests for subsistence. In the villages within and surrounding the BWS, Adivasi communities practice both settled and shifting agriculture, rear livestock, casual labour, collect and sell Non Timber Forest Produce (NTFP). They also depend upon the forests for their daily requirement of fuelwood and collect herbs and plants that are used for food and medicine. The sanctuary was declared in 1985 and as per the Indian Wildlife Act of 1972, local communities were denied access to resources. This led to animosity between the forest department and the local communities and after many years of struggle and resistance, the *de-facto* restrictions on local people to access and use the natural resources are now minimal.

The Enercon India wind power project, developed by Enercon India, is set up in an extension of the forests that form the southern buffer of the wildlife sanctuary. The Wind power project was commissioned in 2008 and started construction shortly afterwards in December 2009. A total of 192 acres of forest land (0.60% of the total area under the BWS) was allotted to Enercon India for the 113 MW wind power project (Byatnal, 2011). The construction of the project required acquiring large tracts of land, clearing forest areas, felling of trees, cementing an access road from the lower ghats to the project site, widening of the access road to allow for wind turbines and construction of a power sub-station, linear transmission lines for power evacuation. The project violates the Supreme Court order that stipulates that every state should declare a 10 km radius of buffer zone as an ecological sensitive zone (ESZ) around protected areas that should be free from developmental activities (MoEF, 2011). The state of Maharashtra has not declared the buffer zone of the sanctuary as an ESZ, even after strong protests and lobbying by conservationists. Since the wind power project began in 2008 and the construction was already underway in 2011, the momentum of the project prevented the government from declaring the buffer zone as an ESZ.

The wind power project is currently functioning and supplying electricity to the grid. The community members living in close proximity to the project site, don't get access to electricity from the wind power project. They are dependent upon electricity access from the grid and it is often inadequate. The villages have power cuts that last for as long as three days at a stretch. The target population for the electricity access are populations in the distant towns of Pune and industrial plants located in the Maharashtra Industrial Development Corridor (MIDC) (Fig. 1).

3.2. Renewable energy context of India

India is one of the top five leading countries worldwide in terms of renewable installation (UNEP, 2015). Various central government legislations and policy mechanisms have played a pivotal role in enabling this transition. The federal National Electricity Act of 2003 was the most important legislation in this direction. This act devolved renewable policy making to provincial level authorities and mandated a policy framework to develop a market for renewable power. Through incentives and capital subsidies, these provincial level nodal agencies aggressively attract private sector investment in the renewable sector. In addition, they also actively facilitate land acquisition, evacuation of power and building of access roads to enable renewable projects. In addition to provincial level subsidies and benefits, the project developers can also avail federal incentives, like accelerated depreciation, tax benefits and capital subsidies, along with the provincial level incentives. The combination of both federal and regional incentives makes renewable energy a highly lucrative sector for private power producers, developers and investors.

Across renewable technologies, the wind energy sector has seen the highest growth in capacity, especially in the post 2003 scenario. India's wind installed capacity has grown from 7850 MW to 34,046 MW from 2006 to 2017. The state of Maharashtra with an installed capacity of 4500 MW is the second leading state for wind power capacity after the south eastern state of Tamil Nadu (MNRE, 2016). The Maharashtra Energy Development Agency (MEDA) is the nodal agency responsible for developing and facilitating wind power mostly through private enterprise. MEDA actively facilitates the acquisition of land, building of approach roads and

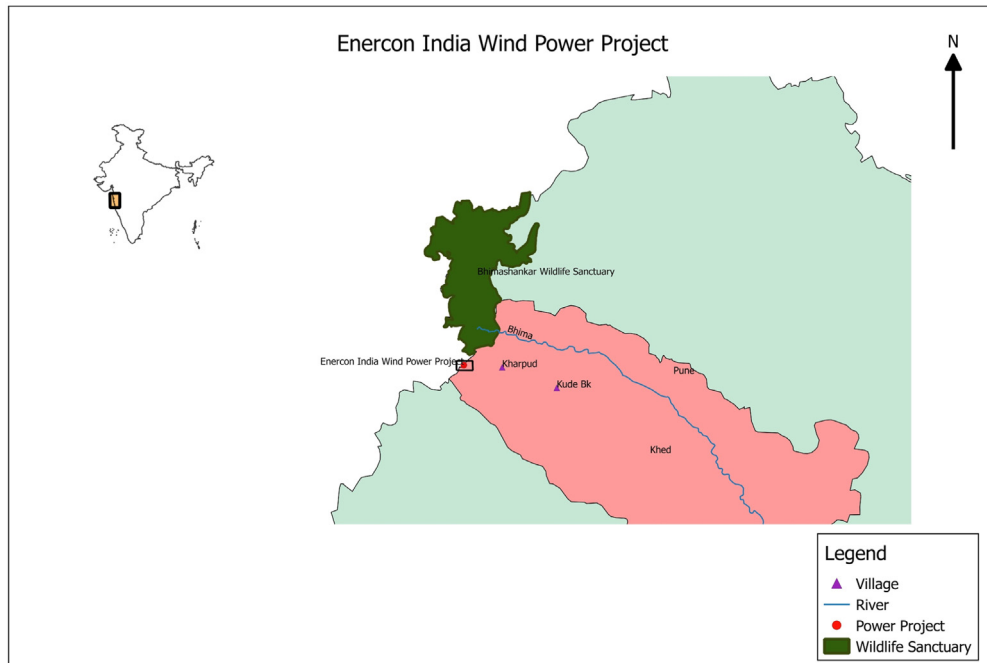


Fig. 1. Showing the Bhimashankar Wildlife Sanctuary and the Enercon India project.

power evacuation arrangements for wind power projects. Maharashtra has been a frontrunner in wind energy and offers a higher than average buy-back rate for wind energy in combination with specific state level policy incentives to attract great investment in wind energy. The wind power sector has grown immensely through private sector participation and has been subject to allegations of forcible and illegal land acquisition, especially in the poor and Adivasi belt of Maharashtra (Jamwal and Lakhapal, 2008). It is against this background that the contestation around the wind power project unfolds. The next sections describe the ways in which renewable energy projects are governed in conservation landscapes in India and presents a detailed account of the various public, private and civic actors that influenced the outcome of the contestation around the wind power project.

4. Governing renewable energy in conservation landscapes in India

In the Indian context, all development projects, except renewable energy, are required to perform an Environmental Impact Assessment (EIA) when located in or around areas of high biodiversity. EIAs are considered to be an indicator of the impact a project will have on the surrounding ecology and biodiversity. Wind power projects are exempt from EIA irrespective of their scale, magnitude and the area of land required for construction. Further, they don't have any social impact assessment requirements. This exemption of renewable energy projects from EIA, is largely prevalent in the Indian context and other countries such as South Africa, have established guidelines for conducting environmental impact assessment for renewable energy projects.

Building a wind power project requires land acquisition on a large-scale. Land is required not just for constructing the turbines but also for corridors between successive windmills, and for laying down transmission lines, drains, widening of access roads and constructive supportive infrastructure like storage of large equipment, power sub-station and other electricity evacuation arrangements. For wind power developers, it is easier to set up their project in forest areas because the developer requires clearance only from the federal Ministry of Environment and Forests. The Ministry of Environment and Forests at the federal level has diverted close to 3900 ha of forest land for wind power, including in areas that have been earmarked as ecologically sensitive and nearly 45% of the total wind power installed in India is located in forest areas (CSE 2014). For the private investors and developers, it is relatively easy to get permission to set up a wind power project in forest areas. In an interview, a developer stated,

"For Agricultural land we have to procure it from farmers and then convert it to commercial land for setting up a wind power project. It is a long process that takes up too much time. It is easier to just approach the Ministry (of environment and forests) because we know exactly whom to contact and they will get us the clearance."

Lobbying by powerful private actors has led to the greater penetration of wind power projects in conservation landscapes. Industrial development in India is categorized as red, orange and green based on the level of pollution and the resultant threat to biodiversity. Red industries are the most polluting and have to follow stringent guidelines including approval from a host of regional as well as federal authorities. In addition to requiring consent from regional and federal level pollution control boards, red industries are not allowed inside the eco-sensitive zones or protected areas. Green category industries are not required to gain consent from federal authorities or conduct an environmental impact assessment. Wind energy power projects and other renewable energy power

plants were initially in the Red category, as early as 2005. In 2011, in response to being petitioned by the Wind Turbine Manufacture's association, the federal environment ministry decided to re-classify the renewable power sector. The red list was modified to exclude wind and solar power generation plants of all capacities, minimum hydropower plants of less than 25 MW and distributed generation of capacity less than 5 MW. Instead these projects were added to the green category. Through this re-classification, the renewable technologies particularly wind and small hydropower plants are exempt from environmental impact assessment and stringent rules that govern other development activities in protected areas. The re-classification of renewable industries as 'green' paved the way for greater penetration of clean energy projects, specifically in areas important for biodiversity.

4.1. The contestation around the Enercon India wind power project

The 113 MW Enercon India wind power project, spread across 191 acres, set up 72 turbines in the ecologically fragile buffer zone of the BWS. This was contested by the local people in the surrounding villages because of lack of development outcomes and the threat the project posed to their traditional livelihoods as well as the local ecology. In protest, the local activists, elected representatives and other concerned villagers, along with a Pune based journalist wrote petitions and submitted memoranda to higher authorities including the Maharashtra State Forest Department, the Maharashtra Energy Development Authority, the federal Ministry of Environment and Forests and others. The local activists include people who reside in the villages that are located in close proximity to the Wind power project. In the petitions and letters, the local villagers claimed that the wind power project disrupted agricultural practices by dumping rubble on the paddy fields also caused landslides in the region. They described the threat posed to the ecology of the landscape and contested the 'sustainable' nature of the wind power project. Thus, they opposed the wind power project on environmental and material grounds, including the threat to forest-dependent livelihoods as well as the ecology in and around the BWS. The project developers channelled selective development outcomes to local villagers in order to weaken the opposition to the wind power project. The next section details the various public, private and civic actors that influenced the outcome of the contestation against the renewable power project and categorizes it across two themes: (1) Electoral politics and selective development outcomes and (2) Conservation politics.

4.1.1. Electoral politics and selective development outcomes

The villages, in close proximity to the Bhimashankar Wildlife Sanctuary (BWS) as well as the site of the wind power project, have differentiated levels of economic development. Villages that have a higher percentage of Adivasi communities have lower levels of development as compared to other villages that are populated by higher castes. These lower levels of economic development and well-being are characterized by lower literacy rate, high percentage of marginal workers who are employed for less than six months, low levels of land ownership among other indicators. Adivasi populations, in and around BWS as well as in other parts of India have been historically and systematically marginalized over the years resulting in land dispossession and alienation. In and around the Bhimashankar Wildlife Sanctuary, there are about 18 adivasi villages with *mahadev kolis* as the dominant Adivasi group in these villages.

All development projects need the approval of the local village elected council, in the form of a 'No-objection certificate' (NOC) in order to start construction. The wind power project developers and the local Member of the Legislative Assembly (MLA) from the ruling party in power at the state level, held meetings with the local rural communities and promised development outcomes such as reliable electricity access, employment benefits, improved road access, schools and community halls as a result of the wind power project. Interviews with the members of the local elected village councils revealed that the project developers made these promises in order to convince them to grant approval to the wind power project. A senior member of the village elected council when interviewed said,

"The project developers were very nice people when they came to get our signatures. The local MLA was also there to show his support for the project. They promised us all things like school, electricity, jobs and community hall, if we gave permission for the project." However, the wind power project did not provide adequate development outcomes for all the affected villages. Rather, the development outcomes were channelled to villages that were the least affected by the wind power project and electoral politics mediated the conflict around the renewable energy project.

The three villages where the protests were concentrated were Kude, Kharpud and Shivegaon. The MLA, justified the project on account of national economic development and local employment. He visited the areas and affected villages along with the project developers to seek approval for the project. In his speeches to the villagers he emphasized,

"This wind power project will bring jobs, electricity, education and overall development to the villages. It will take this village and all other rural areas towards national development and as India progresses, so will each of you."

In order to get access to international Clean Development Mechanism (CDM) financing, the project developers submitted the project design document as part of their application to the United Nations Framework on Climate Change (UNFCCC) and claimed that the wind power project will bring economic prosperity, electricity access and social benefits to the rural communities. The local level social, economic and environmental benefits are a pre-requisite for any renewable energy project to classify as a CDM project.

However, the development outcomes were contingent upon the specific political orientation of the villages and the ability to cast votes in favour of the ruling party (See Table 1). Employment in the wind power project was channelled and targeted to the supporters of the ruling party. The people of Shivegaon, located at a distance of 9 kms from the site of the wind power project, were supporters of the ruling party in power and were opposing the project due to lack of development outcomes. Shivegaon is a largely

Table 1

Village level indicators.

Source:Source: Census data 2011, Government of India.

Village Name	Total no. of households	Population	Scheduled Caste	Adivasi population	Percentage of Adivasi population (%)
Kharpud	110	605	23	529	87.4
Kude	193	1255	9	826	65.8
Shivegaon	289	1370	29	146	10.6

upper caste village while Kude and Kharpud are Adivasi villages with higher percentage of Adivasi populations. The project developers and the MLA held meetings with the key representatives of the people and mutually decided to build a community hall and provide jobs as security guards to select individuals from the village. Interview data revealed that approximately 15 villagers had been given employment in the wind power project. A 20 year old villager from Shivegaon, Arun works as a security guard for the wind power project and was actively involved in the protests against the wind power project. But he withdrew his protest as soon as he got the job and also influenced the other people from Shivegaon to withdraw their protest. When interviewed, he mentioned that other people that were protesting from Shivegaon had also withdrawn their agitation when they got jobs in the wind power project. He said,

“We were protesting to get a community hall and to get jobs in the wind power sector. The MLA and the project developers visited us and listened to our demands and when they fulfilled their promises, we withdrew our protest and I went and told the other villagers that they should also withdraw their protest.”

In contrast, the other two villages Kharpud and Kude, that are closer to the site of the project and to the Bhimashankar wildlife sanctuary, were not provided with adequate development outcomes. Of these two villages – Kharpud is a pre-dominantly Adivasi village with 87.4% of total population belonging to the Adivasi group and is closest to the site of the wind power project. The people of Kharpud and Kude met the project developers and during subsequent meetings demanded that the local temple area be cleaned, road access be improved and electricity access along with employment benefits be provided to them. They also wanted the project developers to repair the road that they had damaged hauling large equipment to the wind power project site and to remove the rubble that had fallen in the paddy fields, disrupting their agricultural practices, but the project developers did not comply.

Kharpud is a stronghold of the opposing political party and only one person, Sameer, was recruited from Kharpud as a security guard and who served as the erstwhile forest guard and worked with the forest department. When interviewed, Sameer stated that, *“Maybe I was recruited because I had some connection with the forest department. But the project developers also asked me to influence the agitating villagers from Kude and Kharpud and to ask them to give up their opposition to the wind power project.”* In the other neighbouring village of Kude, only 2 people were given employment. The villagers from Kude and Kharpud were agitated as their contestation against the project was unsuccessful.

The company officials from Enercon, when interviewed, denied that their project had caused any disruption or harm to traditional livelihoods or to the ecology of the Western Ghats. The project manager stated, *“Enercon has not caused any disruption to livelihoods or environment. We are producing renewable energy and contributing to sustainability of the planet.”* When asked specifically about the development outcomes channelled to the community members, the official replied, *“We are required to demonstrate social impact as part of the CDM process. Therefore, we have helped communities through job creation and other development outcomes like community hall. We have not discriminated against any particular community members.”* However, the activities related to the wind power project, including widening of roads and clearing forest lands, impacted the collection of Non Timber forest produce (NTFP), particularly for the adivasi populations that have lower levels of land ownership. The dumping of rubble on agricultural lands for wealthier (non-advasi) community members, who depend upon subsistence agricultural practices, rendered the land unsuitable for agriculture, leading to a disruption of traditional livelihoods.

4.1.2. Conservation politics

The location of the renewable energy project on the outskirts of conservation landscapes necessitates a focus on the conservation politics that mediates contestations related to the wind power project. The project was sanctioned by the federal Ministry of Environment, Forests and Climate Change and was aided by a letter from the Principal Chief Conservator of forests (PCCF) at the regional forest office. The PCCF had stated that the buffer zone of the sanctuary does not contain any wildlife and the project will not cause disruption to the ecology of the Western Ghats. The subordinate to the PCCF, the range officer, however, negated this claim. In his investigation report, the range officer claimed that *“the area is known to be the habitat of endangered mammals, reptiles and birds, particularly, including the Giant Squirrel and leopards, among many other flora and fauna species”*. However, despite these discrepancies, the project was allowed to begin construction and is currently functioning barely a few kilometres from the Bhimashankar wildlife sanctuary.

In the wake of indiscriminate resorts, tourist guest houses that have been constructed in the buffer zone, the conservationists had been arguing for the buffer zone of the BWS to be declared as an Ecological sensitive zone. The construction of the wind power project sanctioned by the federal ministry of environment and forests, in the buffer zone of the sanctuary exacerbated the situation. The project was involved in national level controversy between two federal committees set up to decide the course of conservation and development projects in the Western Ghats. The need to protect the Western Ghats from increasing encroachments made by

development projects necessitated the setting up of the Western Ghats Ecology Experts Panel (WGEEP). Subsequently, another committee called the High Level Working Group (HLWG) was also set up by the federal ministry to examine the recommendations of the WGEEP in greater detail.

Through the help of the Pune based NGO Kalpavriksha, local activists near BWS approached the MoEF and the federal Central Expert Committee (CEC) highlighting the discrepancy in the opinion of the range forest officer and the PCCF, along with the verdict of the Bombay high court that was favourable to the construction of the wind power project (Kulkarni, 2011). The local opposition was also able to garner the support of academics at the Indian Institute of Science (IISc), who filed a complaint with the central level Ministry of Environment and Forests (MoEF), explaining the ecological destruction caused by the project (Kulkarni, 2011). In 2011, on the recommendations of Jairam Ramesh the then Minister of Environment and Forests, the WGEEP, chaired by renowned conservationist and ecologist Madhav Gadgil, was asked to review the environmental impacts of development projects across the Western Ghats. His team visited the project site and published a detailed case study on the wind power project near BWS in the WGEEP report (Gadgil, 2011). The WGEEP recommended that the wind power project be subject to Environmental Impact Assessment and the eco-sensitive zone should be declared to ensure that the area is free of any development activity that threatens the ecology of the landscape (Gadgil, 2011). The WGEEP also highlighted the threat to local livelihoods and agricultural practices as a result of the wind power project.

The WGEEP report, however, was entangled in a controversy at the federal level because it posed a threat to the indiscriminate mining and other development activities in the Western Ghats (Gadgil, 2014). Overall, the report had recommended zoning 75% of the total area under Western Ghats into levels of ecologically sensitive areas quashing power projects, mining and tourism sectors threatening the biodiversity of Western Ghats. Some parts of Karnataka and Kerala witnessed violent outbursts opposing the WGEEP report from farmers because they felt that the report was anti-farming and consequently anti-livelihoods (Antony, 2014). Plantation owners across different parts of the Western Ghats were led to believe that WGEEP recommends all the areas where plantation owners are settled be converted to ESA (ecologically sensitive areas) thereby minimizing human impacts (Nandakumar, 2013). However, the WGEEP advocated that the local elected village councils should have a greater say in mining and development projects.

The HLWG surveyed the Western Ghats and recommended that the Western Ghats be partitioned into cultural (63%) and natural zones (37%). The natural zones are forested landscapes that are to be preserved using the conservation-by-exclusion format and are to be out of bounds for a range of industrial, mining, quarrying and related activities (Kasturirangan, 2013). The cultural zones are areas that include all freshwater habitats, that are biologically diverse and highly ecologically significant, and are critical for local livelihoods. These cultural zones are laid open to developmental activities though subject to Environmental Impact Assessment. However, renewable energy projects by virtue of being considered sustainable were deemed as category B2 and allowed in both natural and cultural zones (Kasturirangan, 2013). Thus as per the recommendations of the HLWG report, once the federal Ministry of Environment and Forests issues clearance, renewable projects can start construction in ecologically sensitive areas (Kasturirangan, 2013). The recommendations of the Kasturirangan report were accepted “in principle” by the federal environment ministry which at the time was led by Jayanti Natarajan in 2013 (Bhave, 2013). The rhetoric of development and accelerated growth were the key factors in accepting the Kasturirangan committee report. In comparison with the WGEEP, the Kasturirangan committee report de-regulated the area designated under ecological sensitive zones and explicitly favoured and legitimised renewable energy development in prime conservation areas on the basis that it is sustainable.

5. Conclusion

While most studies focus on the broad contours regarding renewable energy policy, there is a need to highlight nuanced accounts of these struggles and situate them within local contexts. This study uses the case of a local opposition to a wind power project located in a highly biodiverse conservation landscape in India, in order to highlight the social and political processes that influence the contestations around the renewable energy development.

In doing so, this article attempts to position renewable energy conflicts as struggles around natural resource access that are mediated and shaped by the interaction between multiple public, civic and private actors as well as institutions and shows how renewable energy development and the resistance against it can be embedded in larger struggles of natural resource access. This paper uses a political ecology approach to focus attention on the complex social, political and cultural dynamics that have traditionally fallen outside the concerns of mainstream energy studies.

So, what does this contestation reveal about the politics of renewable energy in highly biodiverse environments? When located in areas of high biodiversity, renewable energy projects can lead to greater contestations around access to natural resources, thereby also affecting local communities who have nature-based livelihoods. This conflict is in sharp contrast to the long-observed NIMBY (Not-in-my-backyard) phenomena in developed countries (Van Der Horst, 2014) and thus highlights the peculiarities of contestations around renewable energy development in developing countries. While the NIMBY protests in developed countries are mostly attributed to aesthetics, visual appeal and bird hits, contestations around renewable energy in the global south are connected to access to land, forests and traditional livelihoods for marginalized communities.

This paper shows how state agencies and private firms selectively define renewable energy projects as sustainable development in ways that allow them to pursue predatory development, often at the expense of local livelihoods, ecology and development outcomes. As the example from India shows, the positioning of renewable energy as sustainable development, grants it leeway into conservation landscapes where other development projects are not allowed. As a result, the destructive impacts of large-scale renewable energy projects are often overlooked. Thus, the framing of sustainable development in technical and apolitical terms, obscures its complex social and political implications. Moreover, in the case of predatory renewable energy projects that are located in close proximity to

highly biodiverse landscapes, the local communities are caught between the two manifestations of the sustainable development discourse.

Local communities and actors bring diverse perspectives and agendas to bear upon renewable energy development and the contestations around it. While actors at higher scales such as the MLA and government officials from provincial renewable energy agencies such as MEDA justify the renewable energy project on basis of national development, the local villagers construe the project as a development project and expect it to lead to development outcomes, such as job creation, at the local scale. Moreover, the wind power producers have to justify the project to global institutions such as the UNFCCC in terms of its social, economic and environmental contributions at the local scale. Yet, this justification is largely discursive in nature because in practice the benefits from the project are few and far between and depart significantly from what local community members need and want.

Thus, the benefits of renewable energy development tend to accrue at higher spatial scales, such as the regional and the national, while local communities often bear their adverse consequences. In the process, renewable energy projects can have adverse effects on local self-governance, resource access and subsistence practices. While conservation efforts, such as enclosing common lands for biodiversity protection, have had similar adverse consequences for local populations, renewable energy projects have escaped scrutiny, in this regard. As the empirical evidence in this paper illustrates, by affecting the access to development for Adivasi communities, renewable energy development can further marginalize and exacerbate the living conditions of already disadvantaged groups. This serves to further the argument that energy geographies are not pre-ordained but a product of social and political processes and have wide ranging implications.

This research has implications for informing policy around renewable energy development, particularly in the global south. As other studies have pointed out, projects that are ‘environmentally friendly’ can often lead to social inequalities (Cowell et al., 2011), therefore renewable energy projects should not be exempt from social and environmental assessment criteria. Policy makers should recognize that there are trade-offs associated with renewable energy development, particularly when they are located in areas of high biodiversity. Greater attention needs to be paid to defending local populations from these predatory ecological practices in the garb of clean energy by strengthening local institutions and giving greater bargaining power to the local villagers.

This study also suggests that authorities at higher scales such as national and provincial level renewable energy development agencies should promote and facilitate local economic development opportunities and take into consideration the marginalized and vulnerable communities, especially those without private land ownership. Further research should be carried out to assess the comparative impacts of large-scale renewable energy development and its social, political and environmental dimensions. These comparisons would also serve to deepen an understanding around concerns related to large scale renewable energy development, given the unequal development context of rural India and other developing countries. In light of the large-scale expansion of renewable energy policies and projects worldwide, these concerns around renewable energy development would also resonate with other emerging and developing economies who have specified ambitious renewable energy targets such as Mexico, Brazil and China.

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